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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

COUNTRY Poland.

SUBJECT Information Concerning Direct-Current Generators for the Military Services.

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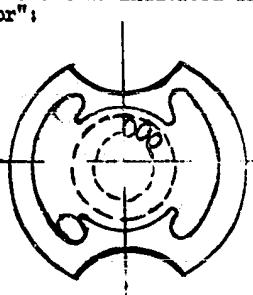
THIS IS UNEVALUATED INFORMATION 25X1

a. DIRECT-CURRENT GENERATORS FOR USE IN AIRCRAFT:

These generators were built to supply mostly two voltages: One for lighting and the other for other purposes, such as heating. The lighting-side voltage was, I believe, 24 volts; the other one must have been lower. How the power of 1500 watts was divided between the two voltages I do not recall.

Mechanically the machine was built as follows: The yoke and the two poles were punched out of sheet steel as indicated in Sketch 1, and similar to the so-called "universal motor";

SKETCH 1.



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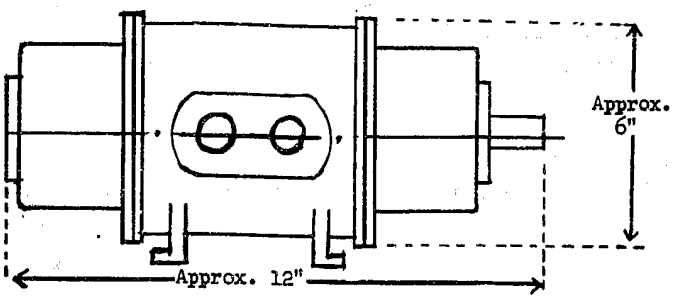
Sketch 2. shows the overall view of the machine of which the yoke housing and the two bearing brackets were made of aluminum. The bearings were ball-ones and the machine had only a few small grid protected openings in the bearing brackets for cooling. There was one rotor core with two windings and two commutators. The machine was shunt excited from one of the commutators.

SKETCH 2.



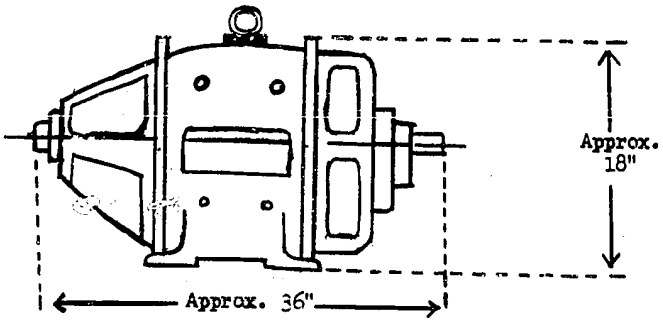
b. DIRECT-CURRENT GENERATORS FOR SEARCHLIGHTS AND SMALL FIELD POWER STATIONS:

These generators were of standard design. Their rating, I believe was: 15 KW, 120 volts, 1000 or 1500 RPM. They were principally shunt excited; there may however have been a series, compounding excitation. All of them were four-pole with four commutating poles.

The size of the rotor was 20 cm in diameter and 16 cm in length with one or two radial canals.

Mechanically it consisted of a cast-iron yoke (magnetically active) laminated main poles, cast-steel commutating poles, cast-iron bearing brackets and sleeve bearings. The enclosure type was "protected" with a strong centrifugal fan on the shaft for ejecting the hot air from the machine. Externally it looked somewhat as shown in Sketch 3.

SKETCH 3.

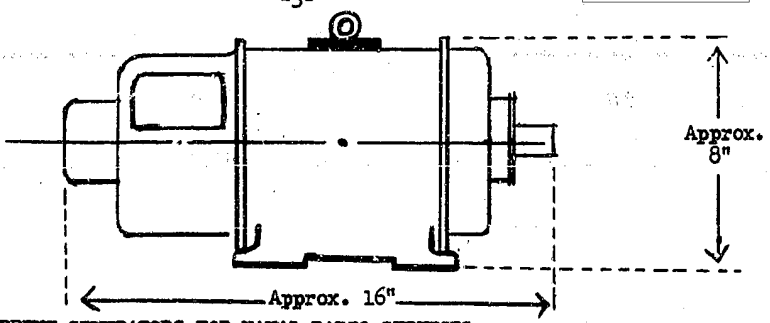


c. AUXILIARY GENERATORS AND MOTORS FOR MOTORIZED UNITS:

These were standard, small-size d.c. motors, driving small machine-tools, such as a lathe, boring machine, shaper, etc, mounted on a bus-like truck serving as a field repair workshop for motorized Army units.

As far as I can remember, they were 1 h.p., 120 volts (approximately 9.5 amperes), 1500 RPM, protected type shunt motors. They were two-pole machines, with two commutating poles with ball bearings. Their active yokes were out of cast-steel and the end brackets (bearing brackets) out of cast iron. The type was a "protected one" with a propeller-like fan on the shaft of the rotor. Its overall dimensions, very roughly, are shown in Sketch 4.

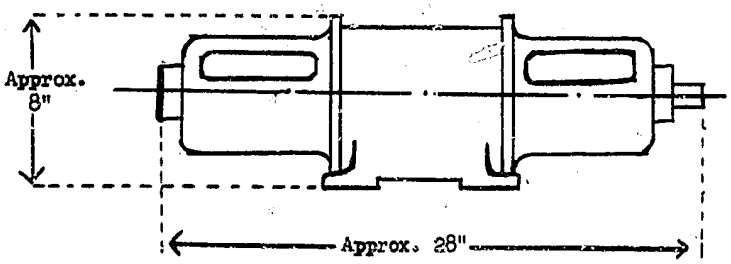
SKETCH 4.



d. DIRECT-CURRENT GENERATORS FOR NAVAL RADIO SERVICES:

These were special, double voltage machines: One voltage was 3000-volts, the other 24, 12 or 6 volts, I do not remember which. The total power, I believe, was about 1.5 KW at 3000 RPM. The main part of this power was allotted to 3000-volt-side. It was a two-pole, shunt field, two-commutator machine. The excitation was taken from the low-voltage commutator. The commutating poles were excited by both circuits. The active yoke was cut of cast-steel, bearing brackets out of cast iron; ball bearings. The approximate over-all size was as per Sketch 5.

SKETCH 5.



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